Automated line for seed preparation

Fully automated treatment and packing facility of seed samples for trial stations

The economic environment requires from agronomic players to develop and produce at the best possible cost. In order to achieve this objective, more and more production steps and complete workshops are automated.

Challenge

The GEVES (French official organization for variety evaluation and seed testing) intends to upgrade its seed preparation workshop to speed up the flow, improve the reliability of order processing and enhance working ergonomic and protection of the staff during phytosanitary treatment.

The preparation process of seed samples is made up of a multitude of steps with very different tasks needing each specialized equipment.

Our solution

Made to measure according to customers specifications, OPTOmachines has developed an automated treatment and packing line receiving quantities up to 250 kg as input and producing bagged samples of 1,5 kg as output.

The combination of know-how in the fields of agronomy and automation enabled OPTOmachine to develop a fully automated line linking and synchronizing perfectly measuring, treatment and bagging devices.

Functioning

After preparation by a mixer with a maximum capacity of 250 kg and a homogenizer with a maximum capacity of 60 kg, the seeds are processed in a machine adapting automatically the kind of treatment and the quantity of coating product.

Afterwards, the seeds are packed in the bagging machine and are labeled with a sticker.

The finished samples are taken by a conveyor system to the distribution area with space for 80 boxes. The operator weighs the filled box and finishes the process by sealing and strapping the box.

All devices are linked to a supervisor and the whole process is tracked and identified with bar codes controlled by the automation.

Benefits:

• **Automated order processing of small and middle sized quantities for seed trials**

• **Customization of each order: seed type, quantity, treatment, shipping**

• **Fully automated customization**

Process

❶ Subset: conveyor – hopper – mixer (max. 250 kg) for preparing samples
❷ Homogenizer (max. 60 kg)
❸ Treatment machine (35 l, max. 25 kg)
❹ Subset: elevator – volumetric dispenser – hopper – bagging machine (max. 1,5 kg)
❺ Delivery conveyor
❻ Boxes on hold for packing
❼ Roller conveyor towards weighing
❽ Balance
❾ Subset: taping machine – strapping machine

Technical data & dimensions

• Cycle time: 5 à 10 bags / min
• Packing capacity: 80 cartons
• Dimensions:
  - preparation area:
    2,50 x 4,40 x 1,50 m WxHxD
  - treatment area:
    2,40 x 3,00 x 1,80 m WxHxD
  - bagging area:
    2,60 x 4,30 x 3,20 m WxHxD
  - distribution area:
    18,30 x 1,80 x 1,90 m WxHxD
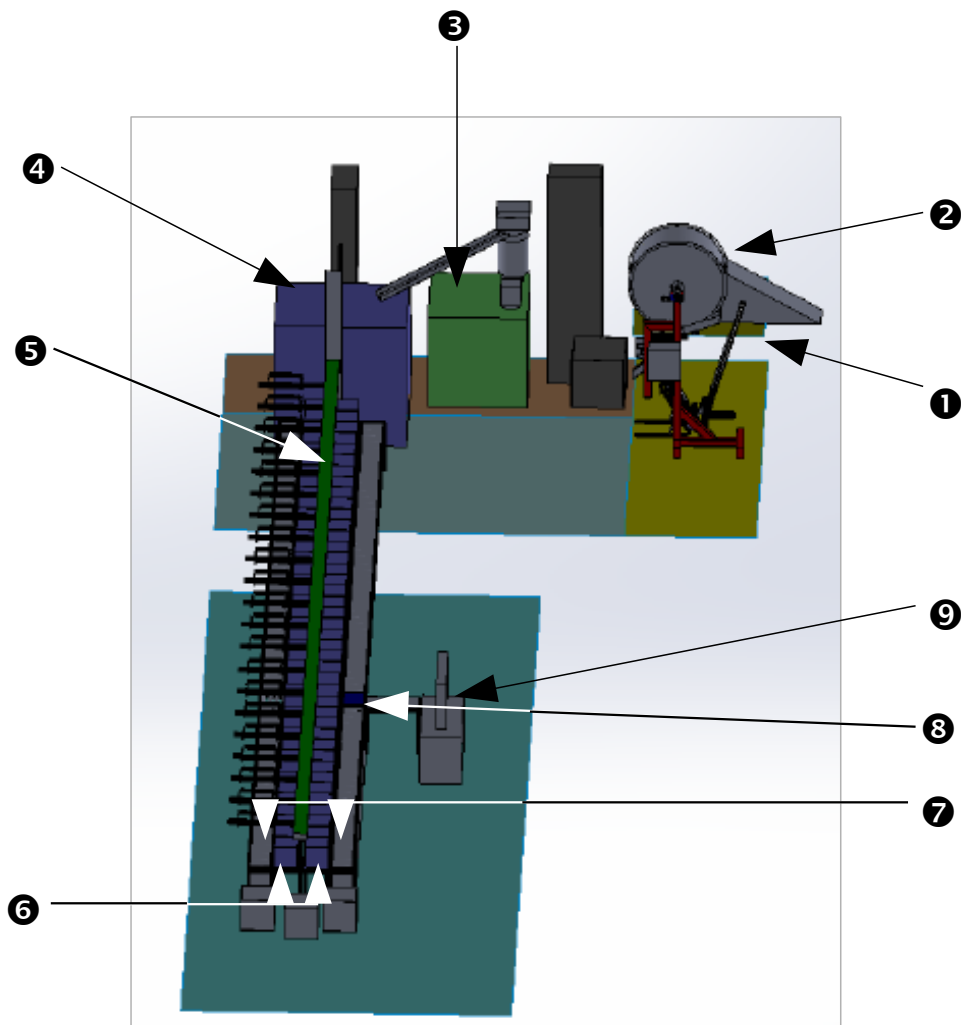
The French company OPTOmachines is a renowned specialist for optical measuring and analysing equipment to the agronomy industry. The portfolio contains standard devices for weighing, counting, classifying applications but also complete custom-made lines for phenotyping, packaging and treatment, etc. OPTOmachines supplies the seed industry leaders, prestigious research institutes and independent laboratories.